

**Electronic Supplementary Material**

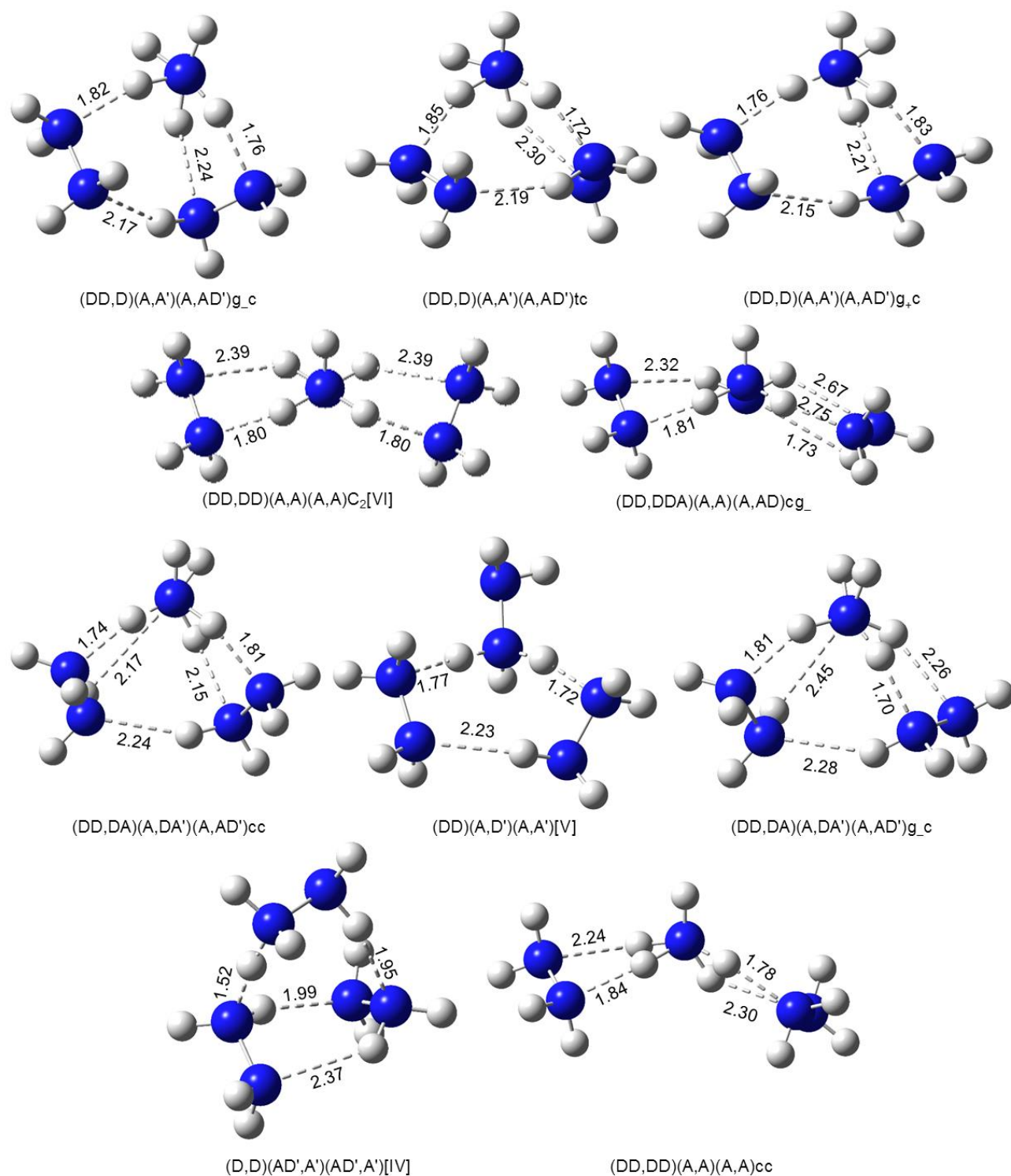
**For**

**Threshold Collision-Induced Dissociation of Proton-Bound Hydrazine and**

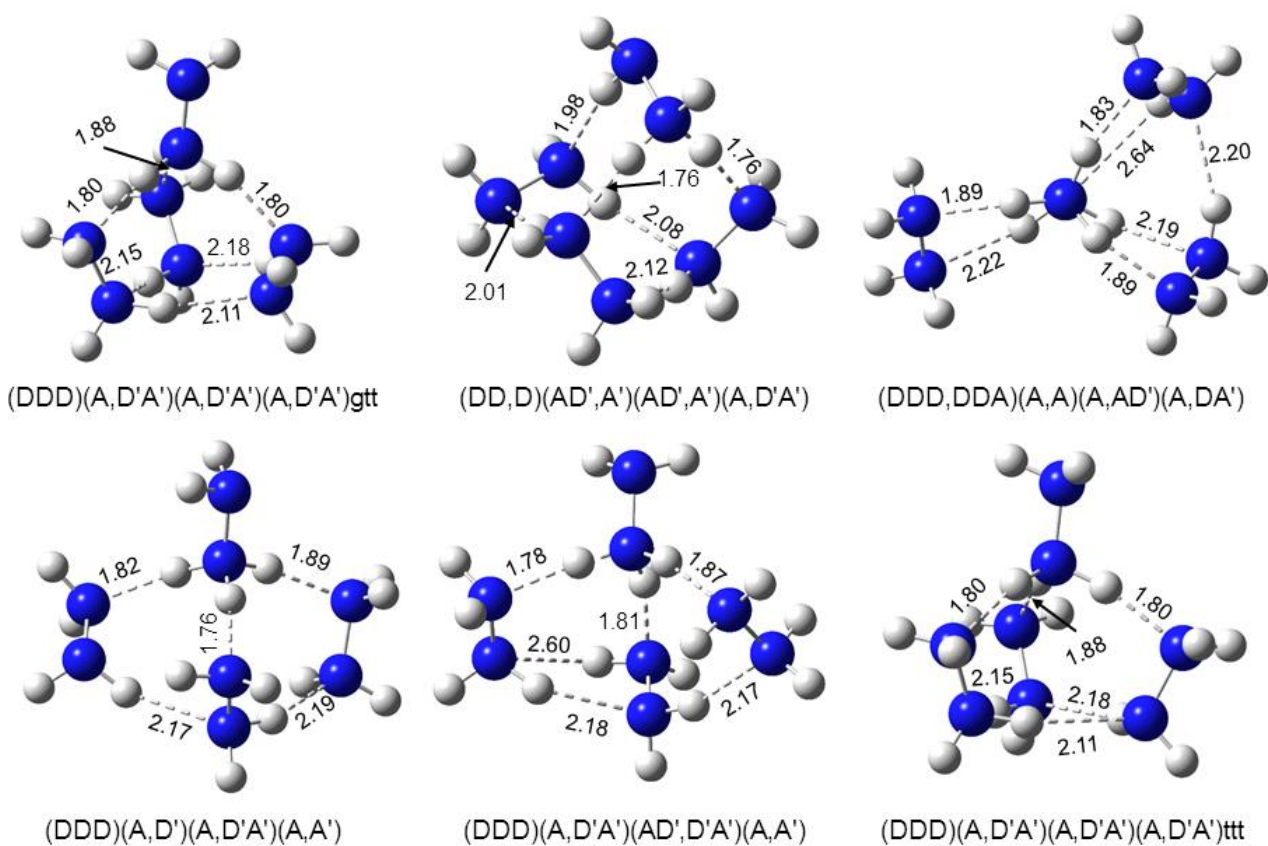
**Dimethylhydrazine Clusters**

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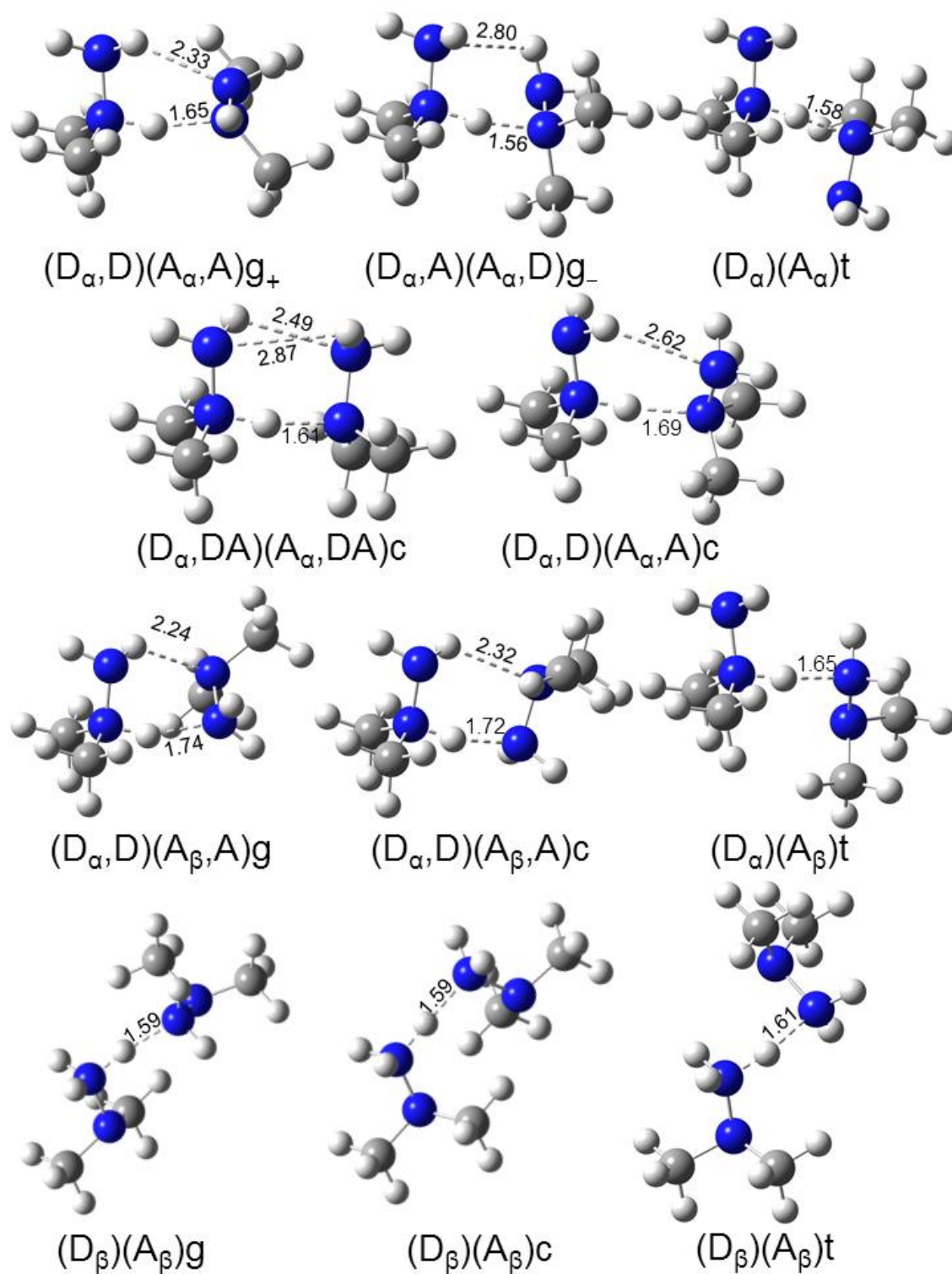
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**Figure S1.** The ten low-lying isomers of  $(\text{N}_2\text{H}_4)_3\text{H}^+$  calculated at the B3LYP-GD3BJ/6-311+G(d,p) level of theory. Hydrogen bonds are indicated by dashed lines with distances indicated in Å. In all cases, the protonated hydrazine is located at the top.



**Figure S2.** The six low-lying isomers of  $(\text{N}_2\text{H}_4)_4\text{H}^+$  calculated at the B3LYP-GD3BJ/6-311+G(d,p) level of theory. Hydrogen bonds are indicated by dashed lines with distances indicated in Å. In all cases, the protonated hydrazine is located at the top.



**Figure S3.** The 11 isomers of  $[(CH_3)_2N_2H_2]_2H^+$  calculated at the B3LYP-GD3BJ/6-311+G(d,p) level of theory. Hydrogen bonds are indicated by dashed lines with distances indicated in Å. In all cases, the protonated UDMH is located to the left.